

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An electronic data transmission ~~and reception~~ system for transmitting electronic data from a transmitting apparatus to a receiving apparatus that is different from said transmitting apparatus, said system comprising:

first through nth apparatuses connected to a network, where n is an integer of 2 or greater;

a transmitting apparatus connected to said ~~net-work~~network for transmitting first electronic data to said first apparatus; and

a receiving apparatus connected to said network for receiving (n+1)th electronic data from said nth apparatus,

wherein ~~said nth~~ a jth apparatus transmits a notification of a reception of nth electronic data to said receiving apparatus when said nth apparatus receives said nth electronic data from ~~an~~ a (nj-1)th apparatus, j being between 1 to n,

said receiving apparatus transmits a receiver authenticator to said jth apparatus, which authenticates the reception of said notification from said nth-jth apparatus~~electronic data in response to the notification of the reception of nth electronic data,~~ and

said ~~n~~^j~~th~~th apparatus generates (~~n~~^j+1)th electronic data which comprise said nth electronic data and said receiver authenticator with a signature of the nth apparatus assigned thereto, and transmits said (~~n~~^j+1)th electronic data to ~~said receiving a~~ (~~j~~^j+1)th apparatus.

2. (previously presented): An electronic data transmission and reception system according to claim 1, wherein said transmitting apparatus transmits said first electronic data and a sender authenticator which authenticates a transmission of said first electronic data, to said first apparatus; and

said first apparatus generates second electronic data which comprise said first electronic data and said sender authenticator with a signature of said first apparatus assigned thereto, and transmits said second electronic data to a second apparatus.

3. (previously presented): An electronic data transmission and reception system according to claim 2, further comprising:

a memory apparatus for use with said transmitting apparatus;

wherein said first apparatus generates transmission proof data which comprise said first electronic data and said sender authenticator with the signature of said first apparatus assigned thereto, and transmits said transmission proof data to said transmitting apparatus; and

said transmitting apparatus stores the transmission proof data transmitted from said first apparatus into said memory apparatus for use with said transmitting apparatus.

4. (Canceled).

5. (original): An electronic data transmission and reception system according to claim 3, wherein said nth apparatus transmits a notification of a reception of nth electronic data to said receiving apparatus when said nth apparatus receives said nth electronic data from an (n-1)th apparatus;

said receiving apparatus transmits a receiver authenticator which authenticates the reception of said nth electronic data in response to the notification of the reception of nth electronic data; and

said nth apparatus generates (n+1)th electronic data which comprise said nth electronic data and said receiver authenticator with a signature of the nth apparatus assigned thereto, and transmits said (n+1)th electronic data to said receiving apparatus.

6. (previously presented): An electronic data transmission and reception system according to claim 2, further comprising:

a memory apparatus for use with said receiving apparatus;

wherein said receiving apparatus stores said (n+1)th electronic data transmitted from said nth apparatus, into said memory apparatus for use with said receiving apparatus.

7. (original): An electronic data transmission and reception system according to claim 5, further comprising:

a memory apparatus for use with said receiving apparatus;
wherein said receiving apparatus stores said (n+1)th electronic data transmitted from said nth apparatus, into said memory apparatus for use with said receiving apparatus.

8. (currently amended): An electronic data transmission and reception system according to claim 2, wherein said receiving apparatus comprises:

a database of said receiving apparatus for storing said sender authenticator and signatures of said n apparatus; and

wherein said receiving apparatus:

fetches said nth electronic data and said receiver authenticator except the signature of said nth apparatus assigned to said (n+1)th electronic data;

fetches said jth electronic data except the signature assigned to said (j+1)th electronic data other than said (n+1)th electronic data and said second electronic data;

fetches said first electronic data and said sender authenticator except the signature of said first apparatus assigned to said second electronic data; and

refers to said database of said receiving apparatus for recognizing that said transmitting apparatus has transmitted said first electronic data.

9. (original): An electronic data transmission and reception system according to claim 6, wherein said receiving apparatus comprises:

a database of said receiving apparatus for storing said sender authenticator and signatures of said n apparatus; and

wherein said receiving apparatus:

fetches said nth electronic data and said receiver authenticator except the signature of said nth apparatus assigned to said (n+1)th electronic data;

fetches said jth electronic data except the signature assigned to said (j+1)th electronic data other than said (n+1)th electronic data and said second electronic data;

fetches said first electronic data and said sender authenticator except the signature of said first apparatus assigned to said second electronic data; and

refers to said database of said receiving apparatus for recognizing that said transmitting apparatus has transmitted said first electronic data.

10. (original): An electronic data transmission and reception system according to claim 8, wherein said first apparatus generates said second electronic data in which the signature of said first apparatus is assigned to a first time stamp that represents the time when said first apparatus receives said sender authenticator from said transmitting apparatus;

said nth apparatus generates said (n+1)th electronic data in which the signature of said nth apparatus is assigned to a second time stamp that represents the time when said nth apparatus receives said receiver authenticator from said receiving apparatus; and

wherein said receiving apparatus fetches said nth electronic data, said receiver authenticator, and said second time stamp except the signature of said nth apparatus assigned to said (n+1)th electronic data; and

fetches said first electronic data, said sender authenticator, and said first time stamp except the signature of said first apparatus assigned to said second electronic data.

11. (original): An electronic data transmission and reception system according to claim 9, wherein said first apparatus generates said second electronic data in which the signature of said first apparatus is assigned to a first time stamp that represents the time when said first apparatus receives said sender authenticator from said transmitting apparatus;

said nth apparatus generates said (n+1)th electronic data in which the signature of said nth apparatus is assigned to a second time stamp that represents the time when said nth apparatus receives said receiver authenticator from said receiving apparatus; and

wherein said receiving apparatus fetches said nth electronic data, said receiver authenticator, and said second time stamp except the signature of said nth apparatus assigned to said (n+1)th electronic data; and

fetches said first electronic data, said sender authenticator, and said first time stamp except the signature of said first apparatus assigned to said second electronic data.

12. (previously presented): An electronic data transmission and reception system according to claim 2, wherein said nth apparatus generates reception proof data which are

electronic data comprising said nth electronic data and said receiver authenticator with the signature of said nth apparatus assigned thereto.

13. (original): An electronic data transmission and reception system according to claim 12, wherein said transmitting apparatus comprises:

a database of said transmitting apparatus for storing signatures of said n apparatus and said receiver authenticator; and

wherein said transmitting apparatus:

fetches said nth electronic data and said receiver authenticator except the signature of said nth apparatus assigned to said reception proof data;

fetches said jth electronic data except the signature assigned to said (j+1)th electronic data other than said reception proof data and said second electronic data;

fetches said first electronic data and said sender authenticator except the signature of said first apparatus assigned to said second electronic data; and

refers to said database of said transmitting apparatus for recognizing that said first electronic data have been transmitted to said receiving apparatus.

14. (original): An electronic data transmission and reception system according to claim 13, further comprising:

a first electronic data memory apparatus;

wherein said transmitting apparatus:

stores said first electronic data into said first electronic data memory apparatus before transmitting said first electronic data; and

when said transmitting apparatus fetches said first electronic data, said transmitting apparatus refers to said first electronic data memory apparatus to recognize that said first electronic data have been transmitted to said receiving apparatus without being falsified.

15. (original): An electronic data transmission and reception system according to claim 14, wherein said nth apparatus generates reception proof data which are electronic data comprising said nth electronic data and said receiver authenticator with the signature of said nth apparatus assigned thereto, and transmits said reception proof data from which said first electronic data have been deleted, to said transmitting apparatus; and

wherein said transmitting apparatus adds said first electronic data stored in said first electronic data memory apparatus to said reception proof data transmitted from said nth apparatus, thereby restoring said reception proof data.

16. (original): An electronic data transmission and reception system according to claim 13, wherein said first apparatus generates said second electronic data in which the signature of said first apparatus is assigned to a first time stamp that represents a time when said first apparatus receives said sender authenticator from said transmitting apparatus;

said nth apparatus generates said reception proof data in which the signature of said nth apparatus is assigned to a second time stamp that represents a time when said nth apparatus receives said receiver authenticator from said receiving apparatus; and

wherein said transmitting apparatus:

fetches said nth electronic data, said receiver authenticator, and said second time stamp except the signature of said nth apparatus assigned to said reception proof data; and

fetches said first electronic data, said sender authenticator, and said first time stamp except the signature of said first apparatus assigned to said second electronic data.

17. (original): An electronic data transmission and reception system according to claim 15, wherein said first apparatus generates said second electronic data in which the signature of said first apparatus is assigned to a first time stamp that represents a time when said first apparatus receives said sender authenticator from said transmitting apparatus;

said nth apparatus generates said reception proof data in which the signature of said nth apparatus is assigned to a second time stamp that represents a time when said nth apparatus receives said receiver authenticator from said receiving apparatus; and

wherein said transmitting apparatus:

fetches said nth electronic data, said receiver authenticator, and said second time stamp except the signature of said nth apparatus assigned to said reception proof data; and

fetches said first electronic data, said sender authenticator, and said first time stamp except the signature of said first apparatus assigned to said second electronic data.

18. (currently amended): An electronic data transmission and reception method for transmitting electronic data from a transmitting apparatus to a receiving apparatus that is different from said transmitting apparatus, said method comprising:

connecting first through nth apparatuses to a network, where n is an integer of 2 or greater;

transmitting from a transmitting apparatus connected to said network first electronic data to said first apparatus;

receiving with a receiving apparatus connected to said network (n+1)th electronic data from said nth apparatus;

transmitting a notification of a reception of nth electronic data from ~~said nth~~ a jth apparatus to said receiving apparatus when said nth apparatus receives said nth electronic data from ~~an~~ a (nj-1)th apparatus, j being between 1 to n;

transmitting a receiver authenticator to said jth apparatus, which authenticates the reception of said notification from said nth-jth apparatus~~electronic data from said receiving apparatus in response to the notification of the reception of nth electronic data;~~ and

generating with the ~~nth-jth~~ nth-jth apparatus (nj+1)th electronic data which comprise said nth electronic data and said receiver authenticator with a signature of the nth apparatus assigned thereto, and transmitting said (nj+1)th electronic data to ~~said receiving~~ a (j+1)th apparatus.

19. (previously presented): The electronic data transmission and reception method according to claim 18, wherein said first electronic data further comprises a sender authenticator which authenticates the transmission of said first electronic data.

20. (previously presented): The electronic data transmission and reception method according to claim 19, further comprising:

generating transmission proof data comprising said first electronic data and said sender authenticator with the signature of said first apparatus assigned thereto, and transmitting said transmission proof data to said transmitting apparatus; and

storing the transmission proof data transmitted from said first apparatus in a memory apparatus for use with said transmitting apparatus.

21. (previously presented): An electronic data transmission and reception method according to claim 20, further comprising:

transmitting a notification of a reception of nth electronic data to said receiving apparatus when said nth apparatus receives said nth electronic data from an (n-1)th apparatus;

transmitting a receiver authenticator which authenticates the reception of said nth electronic data from the receiving apparatus in response to the notification of the reception of nth electronic data; and

generating with said nth apparatus (n+1)th electronic data which comprise said nth electronic data and said receiver authenticator with a signature of the nth apparatus assigned thereto, and transmitting said (n+1)th electronic data to said receiving apparatus.

22. (previously presented): The electronic data transmission and reception method according to claim 19, further comprising:

storing said sender authenticator and signatures of said n apparatuses in a database of said receiving apparatus;

fetching said nth electronic data and said receiver authenticator except the signature of said nth apparatus assigned to said (n+1)th electronic data;

fetching said jth electronic data except the signature assigned to said (j+1)th electronic data other than said (n+1)th electronic data and said second electronic data;

fetching said first electronic data and said sender authenticator except the signature of said first apparatus assigned to said second electronic data; and

referring to said database of said receiving apparatus for recognizing that said transmitting apparatus has transmitted said first electronic data.

23. (previously presented): An electronic data transmission and reception method according to claim 19, further comprising:

generating from said first apparatus second electronic data in which the signature of said first apparatus is assigned to a first time stamp that represents the time when said first apparatus receives said sender authenticator from said transmitting apparatus;

generating from said nth apparatus said (n+1)th electronic data in which the signature of said nth apparatus is assigned to a second time stamp that represents the time when said nth apparatus receives said receiver authenticator from said receiving apparatus.

24. (currently amended): The electronic data transmission and reception method according to claim 19, further comprising:

storing signatures of said n apparatuses and said receiver authenticator in a database of said transmitting apparatus;

fetching said nth electronic data and said receiver authenticator except the signature of said nth apparatus assigned to said reception proof data;

fetching ~~said~~ jth electronic data except the signature assigned to said (j+1)th electronic data other than said reception proof data and said second electronic data;

fetching said first electronic data and said sender authenticator except the signature of said first apparatus assigned to said second electronic data; and

referring to said database of said transmitting apparatus for recognizing that said first electronic data have been transmitted to said receiving apparatus.

25. (previously presented): The electronic data transmission and reception method according to claim 24, further comprising:

storing said first electronic data in a first electronic data memory apparatus of said transmitting apparatus before transmitting said first electronic data; and

referring to said first electronic data memory apparatus to recognize that said first electronic data have been transmitted to said receiving apparatus without being falsified when said transmitting apparatus fetches said first electronic data.

26. (previously presented): The electronic data transmission and reception method according to claim 25, further comprising:

generating from said nth apparatus reception proof data which are electronic data comprising said nth electronic data and said receiver authenticator with the signature of said nth apparatus assigned thereto, and transmitting said reception proof data from which said first electronic data have been deleted, to said transmitting apparatus; and

adding in said transmitting apparatus said first electronic data stored in said first electronic data memory apparatus to said reception proof data transmitted from said nth apparatus, thereby restoring said reception proof data.

27. (previously presented): An electronic data transmission and reception apparatus comprising:

a receiving unit for receiving electronic data from another apparatus;

a signature adding unit for adding a signature for identifying said apparatus to said electronic data thereby generating electronic data for transmitting without deleting a signature for identifying said another apparatus; and

a transmitting unit for transmitting said electronic data for transmitting to said another apparatus.

28. (previously presented): An electronic data transmission and reception method of each apparatus for transmitting electronic data by way of a plurality of apparatuses, said method comprising:

receiving electronic data from another apparatus;

adding a signature for identifying said apparatus to said electronic data thereby generating electronic data for transmitting without deleting a signature for identifying said another apparatus; and

transmitting said electronic data for transmitting to said another apparatus.